

**TECHNICAL REVIEW DOCUMENT**  
**for**  
**MODIFICATION TO OPERATING PERMIT 96OPAD130**

Public Service Co – Cherokee Station  
Adams County  
Source ID 0010001

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**I. Purpose:**

This document establishes the decisions made regarding the requested modification to the Operating Permit for Public Service Company's Cherokee Station. This document provides information describing the type of modification and the changes made to the permit as requested by the source and the changes made due to the Division's analysis.

This document is designed for reference during review of the proposed permit by EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the information provided in the request for modification submitted to the Division May 12, 2004, e-mail correspondence and telephone conversations with the source. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

**II. Description of Permit Modification Request/Modification Type**

The Operating Permit for the Cherokee Station was issued on December 1, 2001. Public Service Company (PSCo) entered into a Voluntary Emissions Reduction Agreement with the Colorado Air Pollution Control Division that applies to the Denver metro area plants (Arapahoe, Valmont and Cherokee). The agreement took effect on January 1, 2003. The agreement requires that calendar year SO<sub>2</sub> emissions from the Denver metro area plants not exceed 10,500 tons/yr or reduce uncontrolled SO<sub>2</sub> emissions by 70%. The agreement specified a calculation methodology to determine the percent reduction of SO<sub>2</sub> emissions. The provisions in the agreement were included in the November 14, 2003 revised Title V operating permit and the percent reduction calculation methodology was included in Appendix G. The source requested changes to the percent reduction calculation methodology.

The provisions in the Voluntary Emissions Reduction Agreement are State-only requirements and the agreement went through public comment and was approved by the Colorado Air Quality Control Commission (AQCC). Since the Division considers that the changes the source is requesting are non-material the Division considers that modifications to the agreement's percent reduction calculation methodology may be made as a minor modification.

In addition, the source requested modifications to the calculation methodology included in the permit for the 20% percent SO<sub>2</sub> reduction requirement for Units 1 and 4 (Section II, Condition 1.5). These changes are similar to the requested changes for the agreement's percent reduction calculation methodology. Therefore, the Division considers that this change also may be made as a minor modification.

### **III. Modeling**

No changes to emission limitations are being made with this modification; therefore, no modeling is required.

### **IV. Discussion of Modifications Made**

#### **Source Requested Modifications**

The Division addressed the source-s requested modifications as follows:

#### **Voluntary Emissions Reduction Agreement Percent Reduction Calculation Methodology (Appendix G)**

The percent reduction calculation methodology requires the source to determine the outlet SO<sub>2</sub> emission rate by dividing the outlet SO<sub>2</sub> emissions (tons/yr) by the annual heat input (mmBtu/yr) based on fuel sampling. Since the outlet SO<sub>2</sub> emission data is taken from the continuous emission monitoring system (CEMS), which also records the heat input rate, the source has indicated that it makes more sense to calculate the emission rate by dividing by the heat input determined by the CEMS. The Division agrees and has revised Appendix G as requested by the source. The specific changes made to the percent reduction calculation methodology are as follows:

- Removed section 3 (accounting for burning of natural gas)
- Removed the calculation of metrowide total annual gas Btus (section 6).
- Changed the calculation of controlled SO<sub>2</sub> emission rate (Section 9) to use the annual heat input from the CEMS rather than the Btus (heat input) from coal and natural gas as determined from fuel use and fuel sampling data.

#### **Monitoring for the 20% SO<sub>2</sub> Reduction Requirement on Units 1 and 4**

Compliance with the percent reduction requirement is based on the difference between

the inlet and outlet SO<sub>2</sub> emission rate (in lbs/mmBtu). The current language requires the source to determine the outlet SO<sub>2</sub> emission rate by dividing the outlet SO<sub>2</sub> emissions (tons/yr) by the annual heat input (mmBtu/yr) based on fuel sampling. Since the outlet SO<sub>2</sub> emission data is taken from the continuous emission monitoring system, the source has previously indicated that it is incorrect to calculate the emission rate by dividing by the heat input based on fuel sampling and that it makes more sense to calculate the emission rate by dividing by the heat input determined by the continuous emission monitoring system. The Division agrees and has revised the monitoring language as requested.

Since the heat input for the outlet SO<sub>2</sub> emission rate is based on the CEMS data, it is not necessary to determine the heat input from gas via fuel sampling. Therefore Condition 2.9 was removed from the permit.

#### Lead Emission Calculations and Fuel Sampling for Lead

Although not specifically requested in the modification application, the language in Condition 12.2 was revised to indicate that the source would determine and report lead emissions for APEN reporting purposes based on the calculation methodology and emissions reported in their annual Toxic Release Inventory (TRI) report. This is consistent with the lead emission calculation language included in the November 14, 2003 modified Title V permit for Arapahoe Station.

Since the permit no longer requires that the lead emission calculations use the lead content of the coal, the requirement to sample coal for the lead content in Conditions 1.9 and 13 have been removed.

#### Other Modifications

In addition to the requested modifications made by the source, the Division used this opportunity to include changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this modification.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments on other permits, to the Cherokee Station Operating Permit with the source's requested modifications. These changes are as follows:

#### Section I – General Activities and Summary

- In Condition 1.4, General Condition 3.g (Common Provisions, Affirmative Defense) was added as a State-only requirement.
- Removed Condition 6 (112(j) case-by-case MACT requirements), since all MACT standards have been signed as final and no Part 2 application is required.

The source submitted a notification for the 112(j) case-by-case MACT requirements indicating that the facility was a major source for HAPS and that they had sources that fell under a category (reciprocating internal combustion engines) for which EPA failed to promulgate MACT standards by the deadline. The EPA signed the final rule for reciprocating internal combustion engines (RICE) on February 26, 2004 but it has not been published in the Federal Register yet. However, based on the final signed rule, it appears that the RICE at this facility are not subject to the RICE MACT provisions. The diesel engines listed in Appendix A of the insignificant activity list are below 500 hp and therefore are not affected sources (40 CFR Part 63 Subpart ZZZZ § 63.6590(a)).

The two emergency generators are over 500 hp and therefore are affected sources. However, existing (constructed prior to December 19, 2002) stationary emergency RICE do not have to meet the requirements of 40 CFR Part 63 Subparts A and ZZZZ, including the initial notification requirements (40 CFR Part 63 Subpart ZZZZ § 63.6590(a)(3)). It should be noted that the definition of an emergency RICE in the RICE MACT specifies that there is no time limit for operation of emergency RICE for emergency situations and for routine testing and maintenance. In addition, an emergency RICE may operate an additional 50 hrs/yr in non-emergency situations. Therefore, although the facility is a major source for HAPS, the RICE MACT provisions do not apply to any of the RICE at Cherokee Station.

#### Section V – General Conditions

- General Condition No. 3 was revised to reflect that 3.g (affirmative defense) is state-only until approved by EPA.